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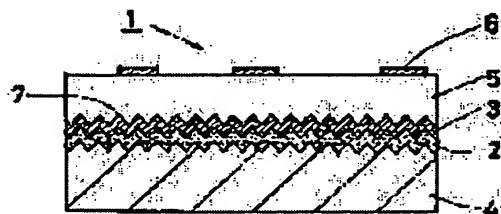
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(54) DECORATIVE SHEET

(57)Abstract:

PURPOSE: To provide a decorative sheet which has the movement of a wooden grain type natural gloss and a cubic effect, and the luster of the gloss of which has a natural glossy feeling such as a natural wood.

CONSTITUTION: On the surface of a brown and opaque polyvinylchloride film 4, a glossy layer 2 is provided using a glossy ink containing mica covered by titanium dioxide with a mean particle diameter of 12 μ m. On the glossy layer 2, a picture pattern layer 3 for which a grain pattern of a cedar straight grain is printed is provided. Then, an uneven pattern 7 of a parallel line pattern consisting of a sine curve formed parallel curve line group is provided by roll- embossing. Then, on the surface of the uneven pattern 7, an ultraviolet ray curing type paint to which silica powder is added is applied and cured, and a dull transparent resin layer 5 with a gloss value of 20 is formed. Then, on the surface of the dull transparent resin layer 5, a vessel pattern 6 with a gloss value of 10 is provided using a two liquid curing type dull ink, and thus, a decorative sheet with a wood grain design is obtained.



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CLAIMS

[Claim(s)]

[Claim 1] The makeup sheet characterized by coming to form the lusterless transparence resin layer containing a flatting agent in the front face of this concavo-convex pattern after preparing a pattern layer in the front face of this photoluminescent layer of the opaque thermoplastics film which has a photoluminescent layer on a front face at least and preparing the concavo-convex pattern of 10,000 line patterns in the above-mentioned thermoplastics film.

[Claim 2] The makeup sheet according to claim 1 characterized by having come partially to print the lusterless pattern which used lusterless ink on the front face of a transparence resin layer, and forming the glossiness of the above-mentioned lusterless pattern in it smaller than the gloss of a lusterless transparence resin layer.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to design nature amelioration of the makeup sheet used for vinyl chloride fancy plywood, a vinyl chloride makeup steel plate, etc.

[0002]

[Description of the Prior Art] The makeup sheet of for example, a grain tone is known as a makeup sheet. As a makeup sheet of the above-mentioned grain tone, it prints on the front face of 1 coloring vinyl chloride. What [gave the irregularity according a transperence type vinyl chloride film to embossing to the printing side by approaches, such as doubling embossing,] 2) What prepared printing and a concavo-convex pattern in the rear-face side of a transperence vinyl chloride film, and carried out the laminating of the rear-face side to other base materials, Moreover, after printing on the front face of 3 coloring vinyl chloride film and preparing irregularity in a front face, what united the bright film with the concave convex by the laminating method, and carried out the laminating to the base material (Japanese Patent Application No. No. 175742 [two to]) is well-known.

[0003] However, since the makeup sheet of the above 1-3 had the fault of design nature falling when it was difficult to express the appearance of gloss of the grain, and migration of gloss enough and it stuck under the fabrication operation of a makeup sheet, and a makeup sheet on other base materials etc., the applicant for this patent has proposed the makeup sheet which solved those faults (JP,5-35394,U). The above-mentioned design has the configuration which prepared the concavo-convex pattern which becomes [on / the recoating layer of this sheet] the front face of the photoluminescent layer of the opaque thermoplastics which has a photoluminescent layer from a specific track group pattern using the sheet which prepared the pattern layer and the recoating layer one by one in the front face, and prepared the transperence resin layer in the front face of this concavo-convex pattern.

[0004]

[Problem(s) to be Solved by the Invention] In case under the fabrication operation of a makeup sheet and a makeup sheet are stuck on other base materials etc., the fault of design nature falling is solved, and the above-mentioned makeup sheet is excellent in the design nature which reproduces well photoluminescent [of a grain plate proper], and its anisotropy (feeling of gloss). However, since the gloss by the concavo-convex pattern and photoluminescent layer of a track group pattern stuck out too far strongly, it became clear that there was a fault from which it may look unnaturally and the soft gloss of a natural grain tone is not acquired. Moreover, although the above-mentioned makeup sheet had a feeling of gloss, its cubic effect of a pattern was inadequate.

[0005] In case this invention is made in view of the above-mentioned fault, namely, sticks under the fabrication operation of a makeup sheet, and a makeup sheet on other base materials etc., it does not have the fault of design nature falling, and it has a feeling of gloss, and aims at adjusting the gloss of gloss and offering the makeup sheet which can give a design similar to the pattern of arbitration, such as natural grain. Moreover, it aims at obtaining easily what was excellent in the cubic effect of a pattern in the above-mentioned makeup sheet.

[0006]

[Means for Solving the Problem] After the makeup sheet of this invention prepares a pattern layer in the front face of this photoluminescent layer of the opaque thermoplastics film which has a photoluminescent layer on a front face at least and prepares the concavo-convex pattern of 10,000 line patterns in the above-mentioned thermoplastics film, it is characterized by coming to form the lusterless transperence resin layer containing a flattening agent in the front face of this concavo-convex pattern.

[0007] Moreover, in the above-mentioned makeup sheet, it becomes impossible to print partially the lusterless pattern which used lusterless ink for the front face of a transperence resin layer, and the glossiness of the above-mentioned lusterless pattern can be formed smaller than the gloss of a lusterless transperence resin layer.

[0008]

[Example] Hereafter, the example of this invention is explained to a detail based on a drawing. A drawing shows the example of this invention and drawing 1 is the sectional view showing one example of this invention makeup sheet.

[0009] the opaque thermoplastics film 4 with which the makeup sheet 1 of this invention has the photoluminescent layer 2 on a front face as shown in drawing 1 — using — the front face of this photoluminescent layer 2 of this film 4 — the pattern layer 3 — preparing — the above — the concavo-convex pattern 7 of 10,000 line patterns is established from from [after forming the photoluminescent layer 2 and the pattern layer 3 in the opaque thermoplastics film 4], and it comes to form the lusterless transperence resin layer 5 containing a flattening agent in the front face of this concavo-convex pattern 7 further

[0010] The above-mentioned photoluminescent layer 2 can be formed by solid printing or pattern printing of ink which added metaled vacuum evaporatio and photoluminescent pigment that what is necessary is just what emits the photoluminescent appearance used as an element for appearing the gloss in a makeup sheet. On the thing and concrete target which call for example, ** pearl pigment, the above-mentioned photoluminescent pigment The piece of a scale-like foil which consists of what ground the inside part and inside pearl of a shell, and a thing (titanium-dioxide covering mica) which was able to be burned on the particle of a mica in titanium oxide or ferrous oxide, On a metal powder and a concrete target, copper, aluminum, brass, bronze, gold, silver, etc. preferably ** A 1-120-micrometer particle or the piece of a scale-like foil, ** What vapor-deposited and ground the above metals (usually ARUMINIMU), the fragment, for example, the polyethylene terephthalate film, of the vapor-deposited plastic film, (silver color powder), There is a pigment which has pearly luster and interference gloss, such as a thing (golden color powder) which ground by performing transparent yellow paint after vacuum evaporatio. The thing of the piece of a scale-like foil is especially desirable. Resin, such as a vinyl system, acrylic, an amino system, an amino alkyd system, a polyurethane system, a cellulose system, and butyral, is mentioned as a vehicle of ink, and well-known means, such as gravure, flexo one, and the silk screen, can be used as the printing approach. The thickness of the photoluminescent layer 2 is usually formed in about 1-10 micrometers. in addition, the above-mentioned

photoluminescent layer -- a thermoplastics film -- it is ***** about photoluminescent pigment at the thermoplastics layer 4 whole that what is necessary is to just be shown in a front face at least -- a thing may be used.

[0011] Moreover, as for the above-mentioned pattern layer 3, a proper pattern is used according to an application, the purpose, etc. of a makeup sheet. For example, the thing copying natural products, such as texture copying the front face of textiles copying the shank of slate (onyx, marble, etc.) front faces, such as various grain patterns, such as a cross-section pattern of grain annual rings and a color tone of the grain, and a marble, such as grain and silk, a graphic form, a notation, an alphabetic character, a ruled line, whole surface solid, etc. are mentioned. With especially the makeup sheet of this invention, patterns, such as a Japan cedar, a hinoki, and Katsura, etc. are the optimal. The above-mentioned pattern layer 3 is formed by the same printing approach as the photoluminescent layer 2 using various well-known printing ink.

[0012] The opaque thermoplastics film 4 used in this invention Usually, the polyolefin resin whose thickness is about 0.02-0.5mm, such as polyethylene and polypropylene, A polyvinyl chloride, a polyvinylidene chloride, polyvinyl alcohol, an ethylene-vinylacetate copolymer, Vinyl system resin, such as an ethylene-vinylalcohol copolymer, polyethylene terephthalate, Polyester resin, such as polybutylene terephthalate, Pori methacrylic acid methyl, An opaque resin film or opaque sheets, such as acrylic resin, such as polymethylacrylate and Pori methacrylic acid ethyl, polystyrene, acrylonitrile-butadiene-styrene copolymer (ABS), a cellulose triacetate, cellophane, and a polycarbonate, are used. In order to form a film opaquely, the color used as the keynote of the whole makeup sheet is given at the same time it scours pigments, such as a titanium dioxide, carbon black, and rouge, etc. and gives lower layer concealment nature. As an opaque thermoplastics film 4, since versatility and workability of a polyvinyl chloride are high, it is used preferably.

[0013] Drawing 2 is the enlarged drawing showing the appearance of the concavo-convex pattern 7 which consists of 10,000 line patterns. The concavo-convex pattern 7 which consists of 10,000 line patterns is established as the shape of cross-section configuration fang furrow-like toothing from on the pattern layer 3 of the opaque thermoplastics film 4 which prepared the above-mentioned photoluminescent layer 2 and the above-mentioned pattern layer 3. The concavo-convex pattern 7 is established in order to give gloss of a request to a makeup sheet like gloss of the grain, and according to whenever [incident angle / of the light from the light source], and, an observer's observation include angle, a predetermined field shines in the shape of a pattern. A makeup sheet can shine and have the seen part of groove irregularity parallel to the field containing the beam of light which comes out of the light source and goes into an observer, i.e., plane of incidence, and a field besides ** looks dark. As shown in drawing 2, in order that the concavo-convex pattern 7 may form the spacing P of height D of heights 71, and ***** heights 71, and the width of heights 71 in about 0.1-1000 micrometers and may take out gloss of the natural quality of the material, height D (or depth of a crevice) and spacing P of heights of the magnitude of the desirable concavo-convex pattern 7 are about 1-100 micrometers. every [furthermore,] field which the height of heights and the depth of a crevice were not single, and was divided -- the depth -- suitably -- distributing -- being regular (gradual) -- the gloss appearance from which it shines by this field and admiration changes delicately can also be made to appear by making it differ

[0014] Size enlargement of the irregularity of this mold carries out to the front face of the opaque thermoplastics film with which the method of establishing the above-mentioned concavo-convex pattern 7 carried out sequential formation of the above-mentioned photoluminescent resin layer and the pattern layer using various well-known presses, such as the Taira version press and a roll embossing machine, or an embossing machine by making the mold which has the shape of toothing corresponding to a desired concavo-convex pattern under heating and pressurization contact, and a concavo-convex pattern 7 is formed in it on the thermoplastics film 4.

[0015] Drawing 3 is the top view showing the mode of 10,000 line patterns. The pattern which becomes combining suitably the parallel-curves group 12 and the parallel straight-line group 13 as the track group pattern of the concavo-convex pattern 7 is shown in drawing 3 (a) - (f) [this drawing (a)], The pattern [this drawing (b) and (c)] of this cardiac closed curve group 12, or the thing [said drawing which consists of an un-parallel track group 14 from which the function parameter is changed and spacing between each curve changes a function curve in the direction of a line (d), (e) It consists of a measurement curvilinear data-line group 20 which observes voice and is obtained by], for example, an oscilloscope, [this drawing (f)].

[0016] There are some which carried out the parallel displacement of what connected curvilinear units, such as function curves, such as a sinusoidal curve, a cycloid curve, an elliptic function curve, and a Bessel function curve, and radii, mutually, and arranged it two or more as the above-mentioned parallel-curves group. As shown for example, in drawing 4 (a) as such a thing, the parallel displacement of the curve shown by $Y=\sin X$ is carried out, and there is a poor parallel-curves group about the same as a large number.

[0017] Moreover, 10,000 line patterns shown in drawing 3 (c) are the aggregates of the track group which has each parallel-curves group in each field surrounded by the border line, and are the examples formed so that the configuration or the direction of a line of this border line and a parallel-curves group might be different for every border-line field. This 10,000 line pattern is the the best for expressing gloss of ** (namely, the shape of a phyma, punctate, the shape of a knothole, spiral grain) of the grain.

[0018] Moreover, 10,000 line patterns shown in drawing 3 (d) are each parameter of the curve expressed with the formula which carried out N division into equal parts of the wavelength of two sinusoidal curves 15 and 16, a phase, a period, and each parameter difference of Y coordinate 0 and 1 -- When referred to as N-1 and N, it is the non-parallel-curves group currently formed from N+1 curve shown. the field of a non-dense and a dense field are formed partially by this, and it sees -- be alike the degree of angle -- gloss changes.

[0019] 10,000 line patterns shown in drawing 3 (e) are curves fundamentally obtained with the same means as this drawing (d). Line [which is expressed with a certain function] 17, for example, $Y1 = a_1 \sin + (b_1 X + c_1) a_2 \sin + (b_2 X + c_2) \dots \sin (b_n X + c_n)$, the line 18 and line 19 by which parameters (a, b, c) differ to the above-mentioned line 17 -- a certain spacing -- arranging -- between A-B and A'-B' -- between -- regular intervals -- dividing -- between A-B and A'-B' -- between -- each dividing points -- between an epilogue and B-C and B'-C' -- it is obtained by repeating between similarly.

[0020] Such a measurement data track group can also use the output wave acquired by outputting a sound signal wave with an oscilloscope, a pen recorder, etc. using the output wave to which 10,000 line patterns which consist of measurement data track groups shown in drawing 3 (f) measured the surface roughness of polyethylene terephthalate.

[0021] Drawing 4 is the top view showing grain tone makeup sheet (e) formed combining this pattern (a) - (d) with each pattern of the (a) irregularity pattern, the (b) photoluminescent layer, (c) pattern layer, and (d) matting pattern in the case of forming the makeup sheet of this invention as a grain tone makeup sheet. The track group pattern of the concavo-convex pattern 7 shown in drawing 4 R>4 (a) carries out the parallel displacement of the sinusoidal curve shown by $Y=\sin X$, and consists of about the same poor track group as a large number, this drawing (b) is the photoluminescent layer 2 formed in whole surface solid in the ink which added photoluminescent pigment, and this drawing (c) shows the pattern layer 3 which carried out printing formation of the pattern of the grain. As an abbreviation rectangular cross is carried out and the transit direction (example: X shaft orientations in $Y=\sin X$, the direction of the drawing Nakaya mark) of the wavelike curve of the above-mentioned concavo-convex pattern 7 and the transit direction of the grain

prepared in the pattern layer 3 are shown in this drawing (**), when the makeup sheet 1 is formed, that to which migration of the gloss when shifting the direction of a look is extremely similar with it of a natural tree (especially straight-wood-grain material) is obtained. [0022] The thickness with which, as for the lusterless transparence resin layer 5 of this invention makeup sheet, the shape of toothing of the concavo-convex pattern 7 is covered -- a front face -- it is formed flat and smooth and this thickness is usually about 10-100 micrometers. The lusterless transparence resin layer 5 gives change of gloss to a makeup sheet, and it prepares it in order to adjust the gloss of gloss by the concavo-convex pattern and photoluminescent layer of 10,000 line patterns to arbitration. The lusterless transparence resin layer 5 is a resin layer which comes to add a flattening agent, and the gloss of this layer can adjust it suitably with a class, an addition, etc. of a flattening agent according to 10,000 line patterns and ***** so that it may become desired glossiness (lusterless degree).

[0023] As the above-mentioned flattening agent, a particle with a particle size [of a calcium carbonate, a barium carbonate, a barium sulfate, a silicon dioxide, an aluminum oxide, acrylic resin, a polycarbonate, polyurethane resin, etc.] of about 1-15 micrometers is used, and 1-30 weight section extent addition is carried out to the resin 100 weight section.

[0024] The transparence or transparence coloring resin the resin which forms the lusterless transparence resin layer 5 excelled [resin] in abrasion resistance and resistance to contamination is used, for example, acrylic resin, urethane resin, and ionizing-radiation hardenability resin are mentioned. Heating is especially unnecessary in the case of hardening with a non-solvent, and since it does not have a bad influence on a concavo-convex pattern at the time of the resin stratification, ionizing-radiation hardenability resin is desirable.

[0025] The above-mentioned ionizing-radiation hardenability resin uses for intramolecular the constituent which mixed suitably the prepolymer, the oligomer, and/or the monomer which have a polymerization nature unsaturated bond or an epoxy group. Silicone, such as acrylate, such as methacrylate, such as unsaturated polyester, such as a condensate of for example, partial saturation dicarboxylic acid and polyhydric alcohol, and polyester acrylate, and epoxy acrylate, and a siloxane, polyester, epoxy, etc. are mentioned as the above-mentioned prepolymer and oligomer. As an example of the above-mentioned monomer, polyfunctional compounds, such as permutation amino alcohol ester of partial saturation acids, such as methacrylic ester, such as acrylic ester, such as styrene monomers, such as styrene, and 2-ethylhexyl acrylate, and methacrylic-acid lauryl, and acrylic-acid-2-(N and N-diethylamino) propyl, and 1,6-hexanediol diacrylate, and/or the Pori thiol compounds which have two or more thiol groups in a molecule, for example, trimethylol propane TORICHIO glycolate etc., are mentioned.

[0026] In order to form the lusterless transparence resin layer 5, coating postcure of the constituent which added the above-mentioned flattening agent is carried out to resin from the concavo-convex pattern 7 on brush coating, a spray coat, a comma coat, a flow coat, a roll coat, a gravure coat, etc. When ionizing-radiation hardenability resin is used, it has the capacity to stiffen ionizing-radiation hardenability resin in an electromagnetic wave or a charged-particle line, and what can be used industrially irradiates a visible ray, ultraviolet rays or an electron ray, an X-ray, etc., and stiffens them. As for the ionizing-radiation irradiation equipment which emits ionizing radiation, various electron ray accelerators, such as an ultrahigh pressure mercury lamp, a high-pressure mercury-vapor lamp, a low pressure mercury lamp, a carbon arc, a black light lamp, a metal halide lamp, etc. and a cock (ultraviolet rays) loft WARUTON mold, a BANDE graph mold, a resonance transformer mold, an insulating core transformer mold or a linear model, the Dynamitron mold, a RF mold, etc. are used (electron ray).

[0027] In stiffening the lusterless transparence resin layer 5 by ultraviolet rays, to the constituent of the above-mentioned ionizing-radiation hardenability resin, acetophenones, benzophenones, MIHIRA benzoyl benzoate, alpha-friend NOKISHI ester, tetramethylthiuram monosulfide, and thioxan tons are mixed as a photopolymerization initiator, and it mixes n butylamine, triethylamine, tri-n-butyl phosphine, etc. as a photosensitizer.

[0028] In this invention, as shown in drawing 1, the lusterless pattern 6 can be formed in the front face of the transparence lusterless resin layer 5. The lusterless pattern 6 is printed in lusterless ink, and it forms the gloss of the lusterless pattern 6 so that it may become smaller than the gloss of the lusterless transparence resin layer 5. Although the lusterless pattern 6 can use the lusterless ink of a well-known resin system using a well-known printing means, since the lusterless pattern 6 is exposed to the outermost surface of a makeup sheet, when scratch-proof nature etc. is taken into consideration, the ink of 2 liquid hardening mold is desirable. The thickness of a lusterless pattern is so good that it is thin in order that physical thickness may negate the visual hollow effectiveness, when not much thick, and its about 10 micrometers or less are usually desirable.

[0029] The gross mat effectiveness is acquired by forming the lusterless pattern 6 so that it may become smaller than the gloss of the lusterless transparence resin layer 5. That is, since gloss is large, the lusterless transparence resin layer 5 is projected visually, and is visible, on the other hand, in spite of forming the lusterless pattern 6 on the lusterless transparence resin layer 5, since gloss is low, it becomes depressed and it looks relatively. as the effective example which forms the lusterless pattern 6 -- the conduit of a grain pattern -- printing a part for a slot as a lusterless pattern -- a conduit -- a slot can be expressed in three dimensions as the same crevice as a natural tree.

[0030] It can also be used for them, carrying out the laminating of the makeup sheet 1 of this invention to other makeup material base materials. As other makeup material base materials, a plate or solid base materials, such as woody base materials, such as MDF and a particle board, a griddle, a polyvinyl chloride precoated steel plate, and aluminum, are used. [, such as a metal plate,] A binder is used for the above-mentioned base material, and a makeup sheet is laminated with a roll laminator, a vacuum forming, etc. Skin temperature in the case of a lamination is made into extent to which the concavo-convex pattern which carried out embossing formation does not disappear, and its 60-100 degrees C are usually desirable.

[0031] Although the makeup sheet of this invention can be used the optimal as a makeup sheet of a grain tone as explained so far, it is not limited to especially a grain tone, but can use for various applications as a makeup sheet which has the design of migration of a pattern and gloss.

[0032] The concrete example of this invention is given and this invention is further explained to a detail.

In example 1 brown, on the front face of the polyvinyl chloride film (Riken Vinyl Industry make: GR) of opaque plasticizer 12phr with gravure Perform solid printing using the photoluminescent ink (the product made from Showa ink industry: ** X pearl) containing the titanium-dioxide covering mica of 18 micrometers of mean diameters (largest path of the piece of scales), and a photoluminescent layer is formed. Subsequently, on this photoluminescent layer, the grain pattern of a Japan cedar straight wood grain was printed (printing ink product made from the Showa industry : ** X), and the pattern layer was prepared. Subsequently, the concavo-convex pattern (a depth of 6 micrometers, heights spacing of 70 micrometers, the amplitude of 50mm of a sine wave, and period of 120mm) of 10,000 line patterns which consist of concurrency curvilinear groups of the letter of a sign curve using the roll embossing method was established from the pattern layer of the above-mentioned polyvinyl chloride film. in addition, roll embossing conditions -- heating drum temperature: 165 degree C, line speed: 10 m/min, printing plate temperature: 70 degree C, and embossing pressure: 40 kgf/cm² it was .

[0033] The gravure reverse coat method was used for the front face of the concavo-convex pattern of the above-mentioned sheet,

coating of the ultraviolet curing mold coating (Dainichiseika Colour & Chemicals Mfg. make: XD-301) with which the silica powder as a flattening agent is added 20% of the weight was carried out so that film thickness might be set to 12 micrometers, and line speed 20 m/min and a black light were stiffened with Wx1602 LGTs, formed the lusterless transference resin layer, and obtained the makeup sheet. Since the obtained makeup sheet was 20 (60-degree incidence), the gross value of a lusterless transference resin layer had an appearance with the anisotropy of the good gloss very similar to a natural Japan cedar and surface gloss was moreover weakened by the lusterless transference resin layer, it was the makeup sheet which has the feeling of gloss which was gentle like a natural tree and settled down.

[0034] on the front face of the makeup sheet of example 2 example 1, further, 2 liquid hardening mold urethane system ink (Dainichiseika Colour & Chemicals Mfg. make-TC) is used, and a gross value becomes about ten -- as -- a conduit -- printing formation of the shank was carried out. the obtained makeup sheet -- a conduit -- in spite of having formed the shank in the front face of a lusterless transference resin layer -- the gross mat effectiveness -- a conduit -- a shank -- denting -- visible -- the gentle feeling of gloss of the above-mentioned example 1 -- adding -- a conduit -- the makeup sheet which the design of a pattern is added and has the design nature of a still more real grain tone was obtained.

[0035]

[Effect of the Invention] While an anisotropy (it depends in the direction of the light source and the direction of a look) produces the makeup sheet of this invention in gloss according to the concavo-convex pattern of a photoluminescent layer and 10,000 line patterns as explained above, and reproducing "gloss" like the gloss of a natural tree proper good So that a transference lusterless resin layer may diffuse the strong unnatural gloss of gloss of the above, and it may ease, for example, the gloss which was gentle, and settled down can be reproduced [of the tune near a natural grain plate] The gloss of gloss can be suitably set up by adjusting the gloss (lusterless degree) of a transference lusterless resin layer, and the gloss of a Japan cedar, a hinoki, etc. can be reproduced especially.

[0036] Moreover, when a lusterless pattern is prepared for the above-mentioned makeup sheet in the front face of a lusterless transference resin layer and the gloss of a lusterless pattern is formed smaller than the gloss of a lusterless transference resin layer, the lusterless pattern visually formed in the front face according to the gross mat effectiveness can become depressed and be seen, and can give the design of a pattern with a cubic effect easily. Thus, the makeup sheet which has the cubic effect which this invention makeup sheet does not have the fall of design nature in the process which sticks a makeup sheet on the fabrication operation and other base materials of a makeup sheet, and was excellent, and gloss is obtained.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the sectional view showing one example of the makeup sheet of this invention.

[Drawing 2] It is the enlarged drawing showing the appearance of one example of a concavo-convex pattern.

[Drawing 3] It is the top view showing the mode of 10,000 line patterns.

[Drawing 4] They are the pattern of the (a) irregularity pattern in the case of forming as a grain tone makeup sheet, a (b) photoluminescent layer, a (c) pattern layer, and a (d) matting pattern, and the top view of a (e) makeup sheet.

[Description of Notations]

1 Makeup Sheet

2 Photoluminescent Layer

3 Pattern Layer

4 Opaque Thermoplastics Film

5 Lusterless Transparency Resin Layer

6 Lusterless Pattern

7 Concavo-convex Pattern Which Consists of 10,000 Line Patterns

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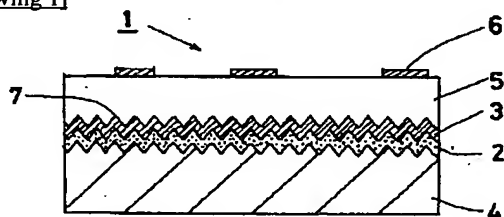
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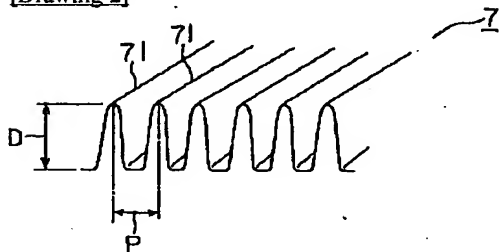
DRAWINGS

[Drawing 1]



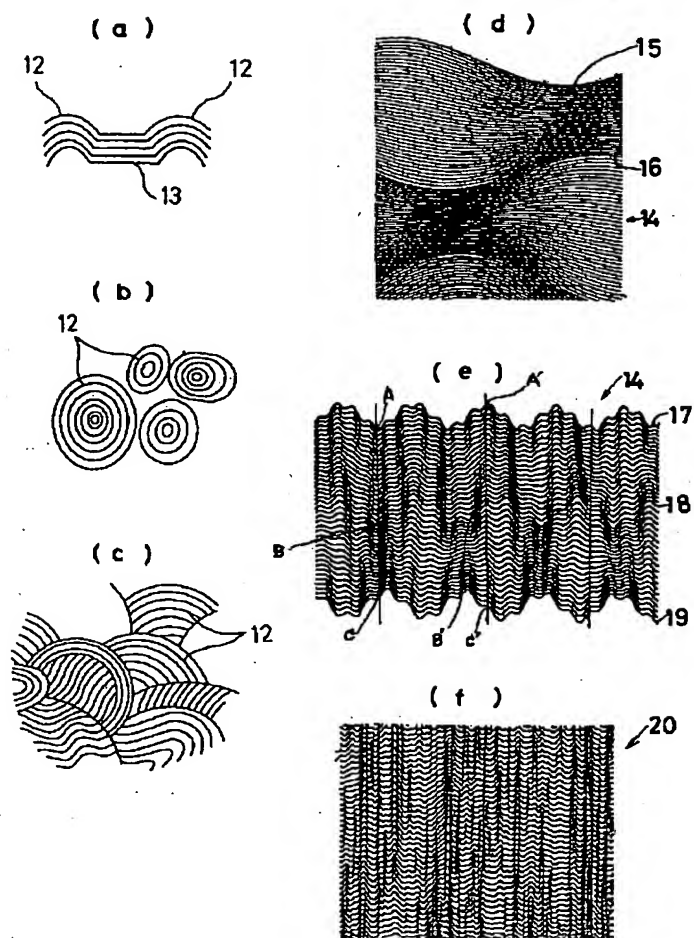
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| 2 光輝性層 | 6 艶消検柄 |
| 3 検柄層 | 7 万線パターンからなる凹凸模様 |
| 4 不透明な熱可塑性樹脂フィルム | |

[Drawing 2]

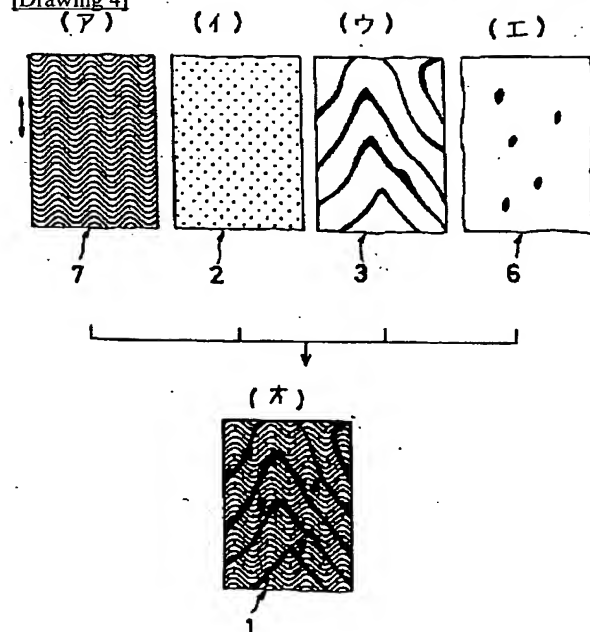


[Drawing 3]

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[Drawing 4]



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(21)Application number : 05-184335

(71)Applicant : DAINIPPON PRINTING CO LTD

(22)Date of filing : 29.06.1993

(72)Inventor : NEZU YOSHIKI

(54) DECORATIVE SHEET

(57)Abstract:

PURPOSE: To provide a decorative sheet which has the movement of a wooden grain type natural gloss and a cubic effect, and the luster of the gloss of which has a natural glossy feeling such as a natural wood.

CONSTITUTION: On the surface of a brown and opaque polyvinylchloride film 4, a glossy layer 2 is provided using a glossy ink containing mica covered by titanium dioxide with a mean particle diameter of 12 μ m. On the glossy layer 2, a picture pattern layer 3 for which a grain pattern of a cedar straight grain is printed is provided.

Then, an uneven pattern 7 of a parallel line pattern consisting of a sine curve formed parallel curve line group is provided by roll- embossing. Then, on the surface of the uneven pattern 7, an ultraviolet ray curing type paint to which silica powder is added is applied and cured, and a dull transparent resin layer 5 with a gloss value of 20 is formed. Then, on the surface of the dull transparent resin layer 5, a vessel pattern 6 with a gloss value of 10 is provided using a two liquid curing type dull ink, and thus, a decorative sheet with a wood grain design is obtained.



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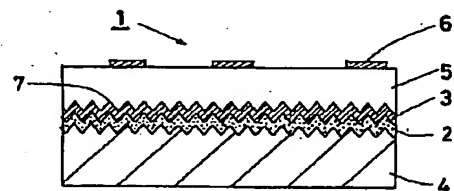
(74) 代理人 弁理士 細井 勇

(54) 【発明の名称】 化粧シート

(57) 【要約】

【目的】 木目調の自然な照りの移動と立体感を有し、且つ照りの光沢が天然木のように自然な光沢感を有する化粧シートを提供する。

【構成】 褐色の不透明なポリ塩化ビニルフィルム4の表面に平均粒径12 μ mの二酸化チタン被覆雲母を含有する光輝性インキを用いて光輝性層2を設け、光輝性層2の上に杉証目の木目絵柄を印刷し絵柄層3を設け、ロールエンボスによりサインカーブ状の平行曲線群よりなる万線パターンの凹凸模様7を設け、該凹凸模様7の表面にシリカ粉末を添加した紫外線硬化型塗料を塗工し硬化させグロス値20の艶消透明樹脂層5を形成し、該艶消透明樹脂層5の表面に2液硬化型の艶消インキを用いてグロス値10の導管絵柄6を設けて木目調の化粧シート1を得た。



- | | |
|------------------|------------------|
| 1 化粧シート | 5 艶消透明樹脂層 |
| 2 光輝性層 | 6 艶消絵柄 |
| 3 絵柄層 | 7 万線パターンからなる凹凸模様 |
| 4 不透明な熱可塑性樹脂フィルム | |

【特許請求の範囲】

【請求項1】 少なくとも表面に光輝性層を有する不透明な熱可塑性樹脂フィルムに該光輝性層の表面に絵柄層を設け、上記熱可塑性樹脂フィルムに万線パターンの凹凸模様を設けた後、該凹凸模様の表面に艶消剤を含有する艶消透明樹脂層を形成してなることを特徴とする化粧シート。

【請求項2】 透明樹脂層の表面に艶消しインキを用いた艶消絵柄を部分的に印刷してなり、上記艶消絵柄の光沢度を艶消透明樹脂層の光沢よりも小さく形成したことを特徴とする請求項1記載の化粧シート。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、塩化ビニル化粧合板や塩化ビニル化粧鋼板等に用いられる化粧シートの意匠性改良に関するものである。

【0002】

【従来の技術】化粧シートとして例えば木目調の化粧シートが知られている。上記木目調の化粧シートとして、1)着色塩化ビニルの表面に印刷を施して、印刷面に透明タイプの塩化ビニルフィルムをダブリングエンボス等の方法でエンボスによる凹凸を付与したものや、2)透明塩化ビニルフィルムの裏面側に印刷と凹凸模様を設け、裏面側を他の基材に積層したもの、また3)着色塩化ビニルフィルムの表面に印刷を施し、表面に凹凸を設けた後透明フィルムを凹凸面にラミネート法により一体化して基材に積層したもの（特願平2-175742号）等が公知である。

【0003】しかしながら、上記1)～3)の化粧シートは木目の照りの外観と照りの移動を充分表現することが困難であったり、また化粧シートの製造作業中や化粧シートを他の基材等に貼着する際に意匠性が低下する等の欠点があったので、本願出願人はそれらの欠点を解決した化粧シートを提案している（実開平5-35394号公報）。上記考案は表面に光輝性層を有する不透明な熱可塑性樹脂の光輝性層の表面に絵柄層、リコート層を順次設けたシートを用い、該シートのリコート層の上から特定の線群パターンからなる凹凸模様を設け、該凹凸模様の表面に透明樹脂層を設けた構成を有するものである。

【0004】

【発明が解決しようとする課題】上記の化粧シートは、化粧シートの製造作業中や化粧シートを他の基材等に貼着する際に意匠性が低下する等の欠点が解決され、木目板固有の光輝性及びその異方性（照り感）を良く再現する意匠性に優れたものである。しかしながら、線群パターンの凹凸模様と光輝性層による光沢が強く出過ぎるために、不自然に見える場合があり、天然木目調の柔らかな光沢が得られない欠点があることが判明した。また、上記化粧シートは照り感を有するものの、絵柄の立体感

が不十分なものであった。

【0005】本発明は上記欠点に鑑みなされたものであり、即ち、化粧シートの製造作業中や化粧シートを他の基材等に貼着する際に意匠性が低下する等の欠点がなく、且つ照り感を有し、照りの光沢を調節して天然木目等の任意の絵柄に類似の意匠を付与可能な化粧シートを提供することを目的とする。又、上記の化粧シートにおいて絵柄の立体感に優れたものを容易に得ることを目的とする。

【0006】

【課題を解決するための手段】本発明の化粧シートは、少なくとも表面に光輝性層を有する不透明な熱可塑性樹脂フィルムに該光輝性層の表面に絵柄層を設け、上記熱可塑性樹脂フィルムに万線パターンの凹凸模様を設けた後、該凹凸模様の表面に艶消剤を含有する艶消透明樹脂層を形成してなることを特徴とする。

【0007】また、上記化粧シートにおいて、透明樹脂層の表面に艶消しインキを用いた艶消絵柄を部分的に印刷してなり、上記艶消絵柄の光沢度を艶消透明樹脂層の光沢よりも小さく形成することができる。

【0008】

【実施例】以下、本発明の実施例を図面に基き詳細に説明する。図面は本発明の実施例を示し図1は本発明化粧シートの1例を示す断面図である。

【0009】図1に示すように本発明の化粧シート1は、例えば、表面に光輝性層2を有する不透明な熱可塑性樹脂フィルム4を用い、該フィルム4の該光輝性層2の表面に絵柄層3を設け、上記不透明な熱可塑性樹脂フィルム4に光輝性層2と絵柄層3を設けた上から万線パターンの凹凸模様7を設け、更に該凹凸模様7の表面に艶消剤を含有する艶消透明樹脂層5を形成してなる。

【0010】上記の光輝性層2は化粧シートにおける照りを現出するための一要素となる光輝性外観を発するものであればよく、金属の蒸着や光輝性顔料を添加したインキのベタ印刷又はパターン印刷により形成することができる。上記の光輝性顔料は例えば、①パール顔料と称するもの、具体的には、貝殻の内側の部分や真珠を粉碎したもの、マイカの微粒子に酸化チタン又は酸化鉄を焼き付けたもの（二酸化チタン被覆雲母）からなる鱗片状箔片、②金属粉、具体的には銅、アルミニウム、真鍮、青銅、金、銀等の好ましくは1～120 μ mの微粒子又は鱗片状箔片、③蒸着されたプラスチックフィルムの破片、例えばポリエチレンテレフタレートフィルムに上記のような金属（通常はアルミニウム）を蒸着して粉碎したもの（銀色粉）、蒸着ののち透明な黄色塗装を行って粉碎したもの（金色粉）等の、真珠光沢や干渉光沢を有する顔料がある。特に鱗片状箔片のものが好ましい。インキのビヒクルとしてビニル系、アクリル系、アミノ系、アミノアルキッド系、ポリウレタン系、セルロース系、ブチラール等の樹脂が挙げられ、印刷方法としてはグラ

ピア、フレキシ、シルクスクリーン等の公知の手段を用いることができる。光輝性層2の厚みは通常1~10 μ m程度に形成される。尚、上記光輝性層は熱可塑性樹脂フィルム、少なくとも表面にあれば良く、熱可塑性樹脂層4全体に光輝性顔料を練込んだものを用いてもよい。

【0011】また上記の絵柄層3は化粧シートの用途や目的等に応じ適宜の絵柄が用いられる。例えば木目年輪の断面模様、木目の色調等の各種木目模様、大理石（オニックス、マール等）等の石板表面の柄を模写した石目、絹等の布帛の表面を模写した布目等の天然物を模写したもの、図形、記号、文字、罫線、全面ベタ等が挙げられる。本発明の化粧シートでは特に杉、檜、桂等の絵柄等が最適である。上記の絵柄層3は公知の各種印刷インキを用い光輝性層2と同様の印刷方法により形成する。

【0012】本発明において用いられる不透明な熱可塑性樹脂フィルム4は、通常、厚みが0.02~0.5mm程度の、ポリエチレン、ポリプロピレン等のポリオレフィン樹脂、ポリ塩化ビニル、ポリ塩化ビニリデン、ポリビニルアルコール、エチレン-酢酸ビニル共重合体、エチレン-ビニルアルコール共重合体等のビニル系樹脂、ポリエチレンテレフタレート、ポリブチレンテレフタレート等のポリエステル樹脂、ポリメタアクリル酸メチル、ポリアクリル酸メチル、ポリメタアクリル酸エチル等のアクリル樹脂、ポリスチレン、アクリロニトリル・ブタジエン-スチレン共重合体（ABS）、三酢酸セルロース、セロハン、ポリカーボネート等の不透明な樹脂フィルム又はシートが用いられる。フィルムを不透明に形成するには、二酸化チタン、カーボンブラック、弁柄等の顔料等を練り込んで下層の隠蔽性を付与すると同時に化粧シート全体の基調となる色を付与する。不透明な熱可塑性樹脂フィルム4としてはポリ塩化ビニルが汎用性及び加工性が高いため好ましく用いられる。

【0013】図2は万線パターンからなる凹凸模様7の外観を示す拡大図である。万線パターンからなる凹凸模様7は、上記の光輝性層2及び絵柄層3を設けた不透明な熱可塑性樹脂フィルム4の絵柄層3の上から断面形状が溝状凹凸形状として設けられる。凹凸模様7は、木目の照り等のように化粧シートに所望の照りを付与するために設けるものであり、光源からの光の入射角度、及び観察者の観察角度に応じて、所定の領域がパターン状に輝くものである。化粧シートは、光源から出て観察者に入る光線を含む面、即ち入射面に平行な溝状凹凸の部分

に、凸部の高さ及び凹部の深さは単一なものではなく区画した各領域毎に深さを適宜配分して規則的（段階的）に異ならしめることにより、該領域によって照り感が微妙に変化する照り外観を現出させることもできる。

【0014】上記の凹凸模様7を設ける方法は、平版プレス、ロールエンボス機等の公知の各種プレスやエンボス機を用いて、上記の光輝性樹脂層、絵柄層を順次形成した不透明な熱可塑性樹脂フィルムの表面に、加熱、加圧下で所望の凹凸模様に対応する凹凸形状を有する型を当接させることで該型の凹凸を賦形して凹凸模様7が熱可塑性樹脂フィルム4上に形成される。

【0015】図3は万線パターンの態様を示す平面図である。凹凸模様7の線群パターンは図3（a）~（f）に示すように、平行曲線群12と平行直線群13を適宜組み合わせるパターン〔同図（a）〕、同心閉曲線群12のパターン〔同図（b）、（c）〕、又は関数曲線をその関数パラメーターを変化させて各曲線間の間隔が線方向に変化する非平行線群14からなるもの〔同図（d）、（e）〕、例えばオシロスコープで音声を観測して得られるような測定曲線データ線群20からなるもの〔同図（f）〕等である。

【0016】上記の平行曲線群としては、正弦波曲線、サイクロイド曲線、楕円関数曲線、ベッセル関数曲線等の関数曲線及び円弧等の曲線単位を連結したものを複数本互いに平行移動して配列したもの等がある。このようなものとして例えば図4（ア）に示すように、 $Y = \sin X$ で示される曲線を平行移動して多数並べた平行曲線群がある。

【0017】また、図3（c）に示した万線パターンは、輪郭線に囲まれた各領域内にそれぞれの平行曲線群を有する線群の集合体であり、且つ該輪郭線及び平行曲線群の形状又は線方向が各輪郭線領域毎に異なるように形成された例である。この万線パターンは木目の杣（即ち、瘤状、斑点状、節穴状又は渦状の木目）の照りを表現するのに最適である。

【0018】また、図3（d）に示した万線パターンは、2つの正弦波曲線15、16の波長、位相、周期及びY座標の各パラメーター差をN等分した式で表される曲線の各パラメーターを0、1...N-1、Nとした場合に示されるN+1本の曲線から形成されている非平行曲線群である。これにより部分的に疎の領域と密の領域が形成され、見る角度により照りが増減する。

【0019】図3（e）に示す万線パターンは、基本的には同図（d）と同じ手段で得られる曲線であり、ある関数で表される線17、例えば、 $Y_1 = a_1 \sin(b_1 X + c_1) + a_2 \sin(b_2 X + c_2) + \dots + a_n \sin(b_n X + c_n)$ 、と上記線17に対してパラメーター（a、b、c）の異なる線18や線19を或る間隔で並べ、A-B間、A'-B'間を等間隔で分割して、A-B間、A'-B'間をそれぞれの分割点どうしを結

び、B-C間、B'-C'間も同様にし、繰り返すことで得られる。

【0020】図3(f)に示す測定データ線群からなる万線パターンは、ポリエチレンテレフタレート等の表面粗さを測定した出力波形を用いたものであり、このような測定データ線群は音声信号波形をオシロスコープ、ペンレコーダなどで出力して得られる出力波形を利用することもできる。

【0021】図4は本発明の化粧シートを木目調化粧シートとして形成する場合、(ア)凹凸模様、(イ)光輝性層、(ウ)絵柄層及び(エ)艶消絵柄のそれぞれのパターンと、該パターン(ア)～(エ)を組合せて形成される木目調化粧シート(オ)を示す平面図である。図4(ア)に示す凹凸模様7の線群パターンは $Y = \sin X$ で示される正弦波曲線を平行移動して多数並べた線群からなり、同図(イ)は光輝性顔料を添加したインキにより全面ベタに形成した光輝性層2であり、同図(ウ)は木目の模様を印刷形成した絵柄層3を示している。上記の凹凸模様7の波状曲線の走行方向(例： $Y = \sin X$ の場合のX軸方向、図中矢印の方向)と絵柄層3に設けた

木目の走行方向を略直交させて同図(オ)に示すように化粧シート1を形成した場合、視線方向をずらした時の光沢の移動が天然木(特に柾目材)のそれと極めて類似するものが得られる。

【0022】本発明化粧シートの艶消透明樹脂層5は凹凸模様7の凹凸形状が覆われる厚さに、表面平滑に形成され、通常この厚みは10～100 μm 程度である。艶消透明樹脂層5は化粧シートに艶の変化を与えるものであり、万線パターンの凹凸模様と光輝性層による照りの光沢を任意に調節するために設けるものである。艶消透明樹脂層5は、艶消剤を添加してなる樹脂層であり、該層の艶は所望の光沢度(艶消度合い)となるように、万線パターンとや輝性層に応じて艶消剤の種類や添加量等により適宜調節することができる。

【0023】上記艶消剤としては、炭酸カルシウム、炭酸バリウム、硫酸バリウム、二酸化珪素、酸化アルミニウム、アクリル樹脂、ポリカーボネート、ポリウレタン樹脂等の粒径1～15 μm 程度の粒子が用いられ、樹脂100重量部に対し1～30重量部程度添加される。

【0024】艶消透明樹脂層5を形成する樹脂は、耐摩耗性及び耐汚染性に優れた透明又は透明着色樹脂が用いられ、例えばアクリル樹脂、ウレタン樹脂、電離放射線硬化性樹脂が挙げられる。特に無溶剤で硬化の際加熱が不要であり樹脂層形成時に凹凸模様に悪影響を与えないことから、電離放射線硬化性樹脂が好ましい。

【0025】上記の電離放射線硬化性樹脂は分子内に重合性不飽和結合又はエポキシ基を有するプレポリマー、オリゴマー及び/又は単量体を適宜混合した組成物を用いる。上記プレポリマー、オリゴマーとして例えば不飽和ジカルボン酸と多価アルコールの縮合物等の不飽和ポ

リエステル類、ポリエステルアクリレート等のメタクリレート類、エポキシアクリレート等のアクリレート類、シロキサン等の珪素樹脂、ポリエステル、エポキシ等が挙げられる。上記単量体の例としては、スチレン等のスチレン系単量体、アクリル酸-2-エチルヘキシル等のアクリルエステル類、メタクリル酸ラウリル等のメタクリル酸エステル類、アクリル酸-2-(N,N-ジエチルアミノ)プロピル等の不飽和酸の置換アミノアルコールエステル類、1,6-ヘキサジオールジアクリレート等の多官能性化合物、及び/又は分子中に2個以上のチオール基を有するポリチオール化合物、例えばトリメチロールプロパントリチオグリコレート等が挙げられる。

【0026】艶消透明樹脂層5を形成するには、樹脂に上記の艶消剤を添加した組成物をハケ塗り、スプレーコート、コンマコート、フローコート、ロールコート、グラビアコート等で凹凸模様7の上から塗工後硬化させる。電離放射線硬化性樹脂を用いた場合には、電磁波又は荷電粒子線の中で電離放射線硬化性樹脂を硬化させる能力を有するものであり、工業的に利用できるものは可視光線、紫外線もしくは電子線、X線等を照射して硬化させる。電離放射線を発する電離放射線照射装置は、例えば超高圧水銀灯、高圧水銀灯、低圧水銀灯、カーボンアーク、ブラックライトランプ、メタルハライドランプ等(紫外線)や、コックロフトワルトン型、バンデグラフ型、共振変圧器型、絶縁コア変圧器型、あるいは直線型、ダイナミترون型、高周波型等の各種電子線加速装置等(電子線)が用いられる。

【0027】艶消透明樹脂層5を紫外線で硬化させる場合には上記電離放射線硬化性樹脂の組成物に光重合開始剤として、アセトフェノン類、ベンゾフェノン類、ミヒラーベンゾイルベンゾエート、 α -アミノキシエステル、テトラメチルチウラムモノサルファイド、チオキサントン類、及び/又は光増感剤としてn-ブチルアミン、トリエチルアミン、トリ-n-ブチルホスフィン等を混合する。

【0028】本発明では図1に示すように透明艶消樹脂層5の表面に艶消絵柄6を設けることができる。艶消絵柄6は艶消インキにより印刷し、艶消絵柄6の光沢は艶消透明樹脂層5の光沢よりも小さくなるように形成する。艶消絵柄6は公知の印刷手段を用い、公知の樹脂系の艶消インキを用いることができるが、艶消絵柄6が化粧シートの最表面に露出するため、耐スクラッチ性等を考慮すると2液硬化型のインキが好ましい。艶消絵柄の膜厚は余り厚いと物理的な厚みが視覚的窪み効果を打ち消すことになる為薄い程良く、通常10 μm 程度以下が望ましい。

【0029】艶消絵柄6を艶消透明樹脂層5の光沢よりも小さくなるように形成することで、グロスマット効果が得られる。つまり、艶消透明樹脂層5は相対的に光沢が大きいため視覚的に突出して見え、一方艶消絵柄6は

艶消透明樹脂層5の上に形成されているにもかかわらず相対的に光沢が低いため窪んで見える。艶消絵柄6を設ける有効な例としては、木目模様の導管溝部分を艶消絵柄として印刷することにより、導管溝部を天然木と同様の凹部として立体的に表現することができる。

【0030】本発明の化粧シート1は他の化粧材基材に積層して使用することもできる。他の化粧材基材としては、MDF、パーティクルボード等の木質基材、鉄板、塩化ビニル被覆鋼板、アルミニウム等の金属板等の平板又は立体基材が用いられる。上記基材に接着材を用いてローラミネーター、真空成形等で化粧シートをラミネートする。ラミネートの際の表面温度はエンボス形成した凹凸模様が消失しない程度にし、通常60～100℃が好ましい。

【0031】本発明の化粧シートはこれまで説明してきたように木目調の化粧シートとして最適に用いることができるが、特に木目調に限定されず、絵柄と照りの移動の意匠を有する化粧シートとして種々の用途に利用することができる。

【0032】本発明の具体的実施例を挙げ、本発明を更に詳細に説明する。

実施例1

褐色で不透明な可塑性12phrのポリ塩化ビニルフィルム（理研ビニル工業製：GR）の表面にグラビア印刷法により、平均粒径（魚鱗片の最も大きい径）18μmの二酸化チタン被覆雲母を含有する光輝性インキ（昭和インク工業製：化Xパール）を用いてベタ印刷を施して光輝性層を形成し、次いで該光輝性層の上に杉材の木目絵柄を印刷（印刷インキは昭和工業製：化X）して絵柄層を設けた。次いで、ロールエンボス法を用いてサインカーブ状の並行曲線群よりなる万線パターンの凹凸模様（深さ6μm、凸部間隔70μm、正弦波の振幅50mm、周期120mm）を上記のポリ塩化ビニルフィルムの絵柄層の上から設けた。尚、ロールエンボス条件は、加熱ドラム温度：165℃、ラインスピード：10m/min、版面温度：70℃、エンボス圧力：40kgf/cm²であった。

【0033】上記シートの凹凸模様の表面にグラビアリバースコート法を用い、艶消剤としてのシリカ粉末が20重量%添加されている紫外線硬化型塗料（大日精工業製：XD-301）を塗膜厚が12μmになるように塗工し、ラインスピード20m/min、紫外線照射装置は160W×2灯にて硬化させて艶消透明樹脂層を形成して化粧シートを得た。得られた化粧シートは、艶消透明樹脂層のグロス値は20（60度入射）であり、天然の杉に酷似した良好な照りの異方性を持つ外観を有し、しかも表面の光沢は艶消透明樹脂層によって弱められてい

るため天然の木のように柔和で落ち着いた光沢感を有する化粧シートであった。

【0034】実施例2

実施例1の化粧シートの表面に更に、2液硬化型ウレタン系インキ（大日精工業製：PTC）を用いてグロス値が10程度となるように、導管柄を印刷形成した。得られた化粧シートは導管柄を艶消透明樹脂層の表面に形成したにもかかわらず、グロス効果により導管柄が凹んで見え、上記実施例1の柔和な光沢感に加え導管模様の意匠が加わりさらにリアルな木目調の意匠性を有する化粧シートが得られた。

【0035】

【発明の効果】以上説明したように本発明の化粧シートは、光輝性層と万線パターンの凹凸模様により光沢に異方性（光源方向及び視線方向に依存）が生じ、天然木固有の光沢のような「照り」を良好に再現するとともに、上記の照りの不自然な強い光沢を透明艶消樹脂層が拡散し緩和して、例えば天然木目板に近い調子の柔和で落ち着いた光沢を再現することができるように、透明艶消樹脂層の光沢（艶消し度合い）を調節することで照りの光沢を適宜設定することができ、特に杉、檜等の光沢を再現できる。

【0036】また、上記化粧シートを艶消透明樹脂層の表面に艶消絵柄を設け、艶消絵柄の光沢を艶消透明樹脂層の光沢よりも小さく形成した場合、グロス効果により視覚的に表面に形成した艶消絵柄が窪んで見え、立体感のある絵柄の意匠を容易に付与することができる。このように本発明化粧シートは、化粧シートの製造作業や他の基材に化粧シートを貼る工程等において意匠性の低下がなく且つ優れた立体感と照りを有する化粧シートが得られる。

【図面の簡単な説明】

【図1】本発明の化粧シートの1例を示す断面図である。

【図2】凹凸模様の1例の外観を示す拡大図である。

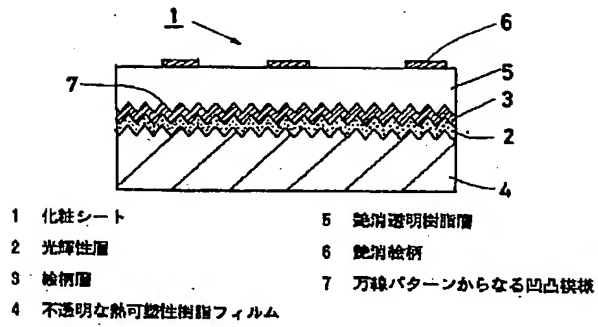
【図3】万線パターンの態様を示す平面図である。

【図4】木目調化粧シートとして形成する場合の（ア）凹凸模様、（イ）光輝性層、（ウ）絵柄層、（エ）艶消絵柄のパターン及び（オ）化粧シートの平面図である。

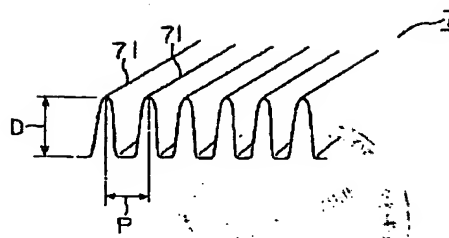
【符号の説明】

- 1 化粧シート
- 2 光輝性層
- 3 絵柄層
- 4 不透明な熱可塑性樹脂フィルム
- 5 艶消透明樹脂層
- 6 艶消絵柄
- 7 万線パターンからなる凹凸模様

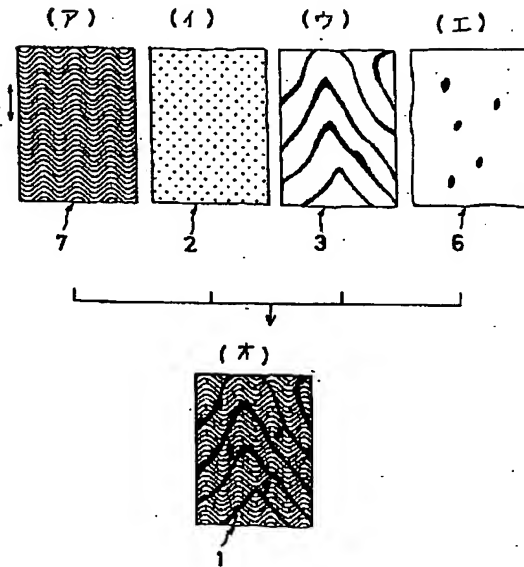
【図1】



【図2】



【図4】



【図3】

